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Application No.:	09/183,335	Filing Date:	October 30, 1998

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First Named Inventor: Foster, Robert A.

Title: Data Processing System For Pricing, Costing and Billing of
              Financial Transactions

Assignee: Financial Systems Technology (Intellectual Property) Pty. Ltd.

Examiner:	Fults, Richard C.	Art Unit:	3693

Attorney Docket No.:   M-7085 US

San Jose, California
February 12, 2007

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Pursuant to 37 C.F.R. § 41.37 and in support of the Notice of Appeal filed on November 14, 2006, Appellants submit this Appeal Brief:

(i) REAL PARTY IN INTEREST

The Assignee, Financial Systems Technology (Intellectual Property) Pty. Ltd., is the real party in interest.

(ii) RELATED APPEALS AND INTERFERENCES

There are no other prior and pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(iii) STATUS OF CLAIMS

Claims 1-29 are pending, rejected and appealed.

(iv) STATUS OF AMENDMENTS

Subsequent to the Final Office Action of May 18, 2006 ("Final Office Action"), Appellants filed an Amendment on September 7, 2006 (the "September Amendment"). In response, the Examiner issued an Advisory Action on October 12, 2006 ("Advisory Action").

(v) SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates generally to data processing systems and, in particular, to banking services pricing. The present invention includes methods and systems for pricing a financial transaction by first defining product rules for each financial transaction, locating an appropriate product rule for a particular financial transaction, linking the product rule to a corresponding price table, calculating a price using the pricing method contained in the price table, and billing the appropriate party using the billing method contained in the price table. A financial service company, using embodiments of the present invention, can price a particular financial transaction based on various criteria, including any special deals made, and bill it to the appropriate party.

Specifically, the present invention provides a system and a method for pricing financial transactions. As set forth in claims 1 and 23, the system or method includes creating in a database system product rules related to the financial transactions (see, for example, the Specification at page 3, line 30 to page 4, line 22); creating price tables, the price tables linked to the product rules (see, for example, the Specification at page 15, lines 5-20); and pricing financial transactions based on the price tables (see, for example, the Specification at page 40, line 34 to page 43, line 21).

As recited in claim 2, the price table of the method for pricing financial transaction can include a billing method (see, for example, the Specification at page 2, lines 25-27). As recited in claim 3 the product rules can further comprise a first portion comprising the name of the product rule (see, for example, the Specification at page 4, lines 23-37); a second portion comprising the status of the product rule (see, for example, the Specification at page 6, lines 13-26); a third portion comprising information regarding pricing and billing (see, for example, the Specification at page 6, line 27 to page 7, line 2); and a fourth portion comprising display only information (see, for example, the Specification at page 7, lines 3-8). As recited in claim 4, the product rules are linked to a price table (see, for example, the Specification at page 4, lines 23-37). As recited in claim 5, a price table may be linked to a pricing method (see, for example, the Specification at page 6, line 26 to page 7, line 2). As recited in claims 6-16, the pricing method can be a flat fee, unit price, unit cost, volume

discount, tiering, cost plus, minimum revenue, maximum revenue, markup of total price, bundled pricing, or account bundling respectively (see, for example, the Specification at page 37, line 16 to page 42, line 6). As recited in claim 17, the product rule can include mandatory attributes that create an identifier for the product rule (see, for example, the Specification at page 4, lines 23-37). As recited in claim 18, the method can apply validating rules to validate the product rules prior to committing them to a database (see, for example, the Specification at page 8, lines 9-14). As recited in claim 19, the product rules can have a default product rule (see, for example, the Specification at page 8, lines 1-3). As recited by claims 20-22, the price tables can contain prices, costs, or negative values (see, for example, the Specification at page 30, lines 18-25).

As recited in claim 24, the data processing system can further comprise means for billing (see, for example, the Specification at page 2, lines 25-27). As recited in claim 25, the means for creating a product rule can comprise means for creating the product rule names (see, for example, the Specification at page 4, lines 23-37); means for creating product rule status (see, for example, the Specification at page 6, lines 13-26); means for associating the product rules to pricing and billing information (see, for example, the Specification at page 6, line 27 to page 7, line 2); and means for associating the product rules to display-only information (see, for example, the Specification at page 7, lines 3-8). As recited in claim 26, the system may comprise means for creating an identifier for a product rule using mandatory attributes (see, for example, the Specification at page 4, lines 23-37). As recited in claim 27, means for looking up optional attributes using identifier (see, for example, the Specification at page 4, lines 10-37). As recited in claim 28, the system may comprise means for applying validation rules to validate the product rules before committing the product rules to a database (see, for example, the Specification at page 8, lines 9-14). As recited in claim 29, the system may comprise means for creating a default product rule (see, for example, the Specification at page 8, lines 1-3).

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(i) Rejection of Claims 1-2, 4-16 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over disclosed prior art ("Disclosed Prior Art") and pp. 35-60, 177-178, 191-210 and 295-309 of *Expert Systems for Experts*, published by John Wiley & Sons, 1988 ("Parsaye"); and

(ii) Rejection of Claims 3, 17-18 and 23-29 under 35 U.S.C. § 103(a) as being unpatentable over Disclosed Prior Art and Parsaye, and further in view of pp. 31, 46-47, 113 and 133 of *Expert Systems: the User Interface*, published by Albex Publishing Corp., 1988 ("Hendler")

(i) Rejection of Claims 1-2, 4-16 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over disclosed prior art ("Disclosed Prior Art") and pp. 35-60, 177-178, 191-210 and 295-309 of *Expert Systems for Experts*, published by John Wiley & Sons, 1988 ("Parsaye");

In the Final Office Action, the Examiner repeated substantially his previous rejection of Claim 1-2, 4-16 and 19-22 in the Office Action of December 20, 2005 ("Previous Office Action") under 35 U.S.C. § 103(a) as being unpatenatable over the Disclosed Prior Art, which is found at Appellant's Specification, at page 1, line 15 to page 2, line 21, in view of Parsaye. With respect to Claim 1, the Examiner states:

> **Regarding Claims 1-2**, Disclosed Prior Art discloses, a method for pricing financial transactions (products), said method comprising:
>
> - Creating a plurality of price tables (fee arrangements – see p. 2, lines 1-7);
>
> - A plurality of product rules (product designation "Fee arrangements can take many shapes, e.g., by product... see p. 2, lines 1-7) each applicable to one or more of said financial transactions (products), wherein each of said product rules (product designation) is linked to one of said price tables (fee arrangements). (see p.2, lines 1-21) and
>
> - For each one of said financial transactions (products). (see p.2, lines 1-21);
>
> - Identifying an applicable one of said product rules...
>
> - Pricing said transaction...
>
> - Wherein said price table (fee arrangement) comprises a billing (calculation of fees) methods (see p. 2, lines 1-21)
>
> Disclosed Prior Art does not teach in a data processing

<u>system,</u> a method for pricing financial transactions, said method comprising:

- Creating, <u>in a database system of the data processing system</u>, a plurality of price tables; and

- Creating, <u>in a database system,</u> a plurality of product rules each applicable to one or more of said financial transactions, wherein each of said product rules is linked to one of said price tables.

Disclosed Prior Art does not teach that the utilization of price tables (fee arrangements) is automated. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have automated the method, since it has been held that broadly providing a mechanical or automatic means to replace manual activity that accomplishes the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

Storage of information in a database and the use of a rule-based system/method for retrieval and filtering of said information is old and well-known in the art of computer system designs and expert system design, as evidenced by Parsaye (see pp. 35-60 and 195-211). It would have been obvious to one skilled in the art at the time the invention was made to have modified Disclosed Prior Art by incorporating a database storage capacity and a rule-based system/method for retrieval, as disclosed by Parsaye, to allow for the use of an expert system to automate the retrieval and application of data, such as pricing, efficiently and quickly.

In response, in the September Amendment, Appellant pointed out that Claim 1 recites a data processing system that includes in a database system price table-linked product rules for financial transactions:

1.   In a data processing system, a method for pricing financial transactions, said method comprising:

creating, in a database system of the data processing system, a plurality of price tables;

creating, in the database system, a plurality of

product rules each applicable to one or more of said
financial transactions, wherein each of said product
rules is linked to one of said price tables; and

for each one of said financial transactions:

identifying an applicable one of said
product rules for said transaction; and

pricing said transaction according to the
price table linked to said identified applicable
product rule.

As recited in Claim 1, and explained in Appellant's specification, at page 4, lines 1-31, and at page 30, lines 24-37, these "product rules" and "price tables" are interacting entities of the database system. Contrary to the Examiner's assertion, the Disclosed Prior Art (at page 1, line 15 to page 2, line 21) neither discloses nor suggests product rules or price tables. In fact, the Disclosed Prior Art does not disclose the operations of a database system, but relates only generally the fee arrangements and the competitive environment associated with financial services:

Furthermore, fee arrangements change in value and structure in response to competitive situations. Fee arrangements can take many shapes, e.g., by product; by time of submission; by specified execution time; by window of time between submission and execution; by transaction value; by pre-assigned payment slots; and/or by some combination of these. In addition, customers are mobile and shop for the best deals. The methods of payment, timings of payment, cash management practices and credit requirements change. Also, competitors pricing strategies change. In response to these changes, FSCs need the ability to calculate pricing accordingly.

Therefore, FSCs not only need to be able to accurately measure the internal economics of the delivery of each product, the margin, the value of the customer relationship overall, and how those measures are changing. The FSCs also need the flexibility to perform relationship pricing by product or across products, taking special arrangements into consideration. In the same time, the FSCs need an infrastructure to keep up with the ever-changing market demands.

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In other words, the Disclosed Prior Art does not even relate to a relational database system. As interacting product rules and price tables are not described in the Disclosed Prior Art above, the Examiner's statement that Appellant's Claim 1 is mechanical or automation of manual activities is not supported. Further, a general reference to "rule-based system/method for retrieval and filtering of ... information" does not disclose or suggest Claim 1's specific recitation of product rule entities and price tables of a database system. As the portion of Appellant's disclosure that the Examiner relied upon does not disclose Claim 1's database entities of price tables and product rules, the combined teachings of the Disclosed Prior Art and Parsaye simply do not meet or suggest Claim 1's limitations.

Appellant pointed out in the September Amendment that these arguments were previously made in an Amendment filed on February 2006 ("February Amendment"). In the Final Office Action, in response to the arguments presented in the February Amendment, the Examiner states, in pertinent parts:

<center>*   *   *</center>

> Applicant contends that Disclosed Prior Art does not disclose nor suggest product rules nor price tables, nor that such elements are linked. Examiner respectfully disagrees and asserts that Disclosed Prior Art does disclose price tables ("fee arrangements") wherein each price table ("fee arrangement") is referenced and/or linked to a product rule (a product designation as communicated by phrase "fee arrangements can take many shapes, e.g., **by product***).

> Applicant contends that the Disclosed Prior Art "relates only generally [to] the fee arrangements". (see applicant's arguments, p. 9). Examiner agrees with applicant's contention. However, the claim limitations can be found within the Disclosed Prior Art's general discussion of fee arrangements, nonetheless.

> Applicant contends that Claim 1 claims that "product rules" and "price tables" are interacting entities of a database system" and that Disclosed Prior Art "does not disclose the operations of a database system." (see applicant's arguments, p. 9). Examiner agrees. However, "one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references."

In re Keller, Terry, and Davies, 208 USPQ 871, 882 (CCPA 1981). Additional cited referenced references, Parsaye and Hender, are utilized for that purpose.

The Parsaye reference, *Expert Systems for Experts, is* a general textbook concerning the development and structure of expert based systems. Parsaye discloses the storage of information in a database ("a relational database") in order to allow a computerized system to retrieve and/or analyze stored data. (see pp. 203 - 204). Furthermore, Parsaye discloses the organization of information within the database according to "tables" and accessing such information through use of "rules". (see pp. 204 - 210). While Parsaye does not, as the applicant contends, specifically disclose "product rules" nor "price tables," Parsaye does disclose generally applicable technological concepts such as data storage, data analysis and data retrieval, which would have been applicable to any endeavor seeking to utilize data storage, data analysis and data retrieval.

The modification of the Disclosed Prior Art, which discloses price tables ("fee arrangements") linked to product rules ("product"), by incorporation of a computerized system to store and retrieve such information, as disclosed by Parsaye, would have been obvious to one of ordinary skill in the art at the time the invention was made as it "is natural to try and apply the technology of expert systems to these large databases" (see Parsaye, pp. 203 - 204), and in light of the general drive to automate information storage and retrieval which is obvious in view of *In re Venner, 120 USPQ 192.*

Therefore, in the September Amendment, Appellant pointed out that (1) the Examiner admitted above that "fee arrangements" discussed in Applicant's Disclosed Prior Art do not relate to operations of a database system, and (2) the Examiner also admitted that Claim 1's "price tables" and "product rules" refer to interacting entities in a database system that are not specifically disclosed by Parsaye. Yet, the Examiner links with no support the Disclosed Prior Art's "fee arrangements" to Claim 1's "price tables" and "product rules." The Examiner argues that Parsaye provides the teaching to convert a general discussion of "fee arrangements" – a discussion relating merely to the competitive conditions in the financial industry -- to specific database entities "price tables" and "product rules." The Examiner based his contentions on (1) "Parsaye discloses the organization of information

within the database according to 'tables'" and (2) "Parsaye does disclose generally applicable technological concepts such as data storage, data analysis and data retrieval, which would have been applicable to any endeavor seeking to utilize data storage, data analysis and data retrieval." Such general statements simply does not disclose or suggest the specific database entities recited in Claim 1.

Further, the Examiner's arguments ignore the fact that, in Parsaye, the term "table" is a term that is defined to have the specific meaning of "a relation in a relational data model". This meaning of the term "table" is given in the first paragraph of section 5.10.1, page 204, where Parsaye teaches:

> As discussed in Appendix D, the relational data model views the world in terms of *relations* which are essentially tables. We often use the term table, instead of relation. Each entry has a value for each attribute. Each table has a *schema* which lists its *attributes* or *fields*. The relation, or table, is obtained by providing instances, entries or *records* for the schema. Further, each entry or record has a record number which uniquely identifies it.

Thus, the "fee arrangements" discussion in Appellants' Disclosed Prior Art cannot suggest any meaningful "price table" entity consistent with Parsaye's definition of a table. Any "price table" that can possibly be consistent with Parsaye would be one that satisfies Parsaye's requirements for a table – i.e., a table that has a "schema," "attributes" and "fields". Therefore, contrary to the Examiner's contention, such a "price table" cannot be arrived at from a general discussion of "fee arrangements," based on "generally applicable technological concepts such as data storage, data analysis and data retrieval." Teachings that link specific characteristics of the "fee agreements" with the specific structural requirements of a "price table" is required. The Examiner, however, has admitted that such teachings are found in neither Appellant's Disclosed Prior Art nor Parsaye. In other words, the Examiner's attempt to link "fee arrangements" to "price tables" is unjustified and fails in both logic and factual support. Even when one combines Appellant's Disclosed Prior Art and Parsaye using impermissible hindsight, the combined teachings would not suggest to those skilled in the art the "price tables" or "product rules" recited in Applicant's Claim 1.

In the Advisory Action, in response to the Appellant's arguments of record, the Examiner merely states:

> Appellant's arguments merely rehash issues addressed
> in Final Rejection filed on 5/18/2006 and incorporate therein.
> Thus, the finality of the previous Office Action is maintained.

Therefore, the Examiner provides no rebuttal to Appellant's arguments.

Accordingly, Appellant submits that Claim 1 and dependent Claims 2, 4-16 and 19-22 are each allowable over the Disclosed Prior Art in view of Parsaye. Reversal of the Examiner's rejection under 35 U.S.C. § 103(a) of Claims 1-2, 4-15 and 19-22 is therefore requested.

(ii) Rejection of Claims 3, 17-18 and 23-29 under 35 U.S.C. § 103(a) as being unpatentable over Disclosed Prior Art and Parsaye, and further in view of pp. 31, 46-47, 113 and 133 of *Expert Systems: the User Interface*, published by Albex Publishing Corp., 1988 ("Hendler")

The Examiner also repeated the rejection of Claims 3, 17-18 and 23-29 in the Previous Office Action under 35 U.S.C. § 103(a) as being unpatentable over Disclosed Prior Art and Parsaye, as the Examiner construed under Claim 1, and in further view of Hendler. With respect to Claim 3, the Examiner states:

> Hendler discloses a method wherein each of said
> product rules (rules) comprise:
>
> • A name of said product rule (rule) ...
>
> • A status of said product rule...
>
> • Display only information. (Rule accesses
> knowledge base and retrieved information is
> "selectively displayed as desired by the
> knowledge base author or eventual users by
> using the DISPLAY command...
>
> It would have been obvious to one with ordinary skill
> in the art at the time the invention was made to have modified
> Disclosed Prior Art and Parsaye by incorporating a linkage

between the product rule and stored data, as disclosed by parsaye, and naming the product rule, providing a status of the product rule and assigning display only information, as disclosed by Hendler, to incorporate and utilize standard conventions and procedures commonly utilized for rule-based expert sytems.

As discussed above, the combined teachings of Appellant's Disclosed Prior Art and Parsaye neither disclose nor suggest the "product rules" and "price tables" entities recited in Applicant's Claim 1. Further, contrary to the Examiner's contention, Hendler also neither discloses nor suggests "product rules" recited in Appellant's Claim 1. Hendler discloses merely general concepts of a rule-based system. Hendler does not disclose or suggest pricing a financial transaction, as recited in Claim 1. As Claims 3, 17 and 18 each depend from Claim 1, these claims are therefore allowable over the combined teachings of "Disclosed Prior Art," Parsaye, and Hendler. Similarly, Claims 23-29, each also reciting "price tables" and "product rules" entities of a database system, are therefore also allowable over the combined teachings of "Disclosed Prior Art," Parsaye, and Hendler.

In response to Appellant's arguments in the February Amendment, the Examiner states in the Final Office Action:

> The Hendler reference, *Expert Systems: The User Interface, is* another general textbook concerning the development and structure of expert based systems. Hendler was utilized to account for claim limitations that are standard concepts in expert systems, such as product rule naming (see p. 113), product rule status (p. 133) and display information (see pp. 46 - 47).
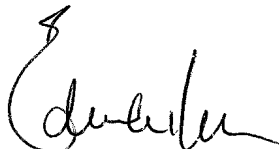
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art and Parsaye by incorporating standard conventions and procedures commonly utilized in rule based expert systems, as disclosed by Hendler, as such conventions and procedures are commonly utilized in rule-based expert systems.

As the Examiner merely relies on "standard conventions and procedures commonly utilized in rule based expert systems" to modify a general discussion of "fee arrangements" to specific database entities "price tables" and "product rules, for the reasons already stated
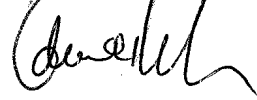
above with respect to Claim 1, the combined teachings of Appellant's Disclosed Prior Art, Parsaye and Hendler do not disclose or suggest the "price tables" and "product rules" recited in Claims 3, 17-18 and 23-29. Accordingly, Appellant submits that Claims 3, 17-18 and 23-29 are allowable over these teachings. Reversal of the Examiner's rejection of Claims 3, 17-18 and 23-29 is therefore requested.

Conclusion

For the foregoing reasons, Appellant respectfully submits that all pending claims (i.e., Claims 1-29) are allowable. Reversals of the Examiner's rejections of these claims are therefore requested. If the Board or the Examiner has any questions regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Appellant at 408-392-9250.

Certificate of Transmission: I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office (USPTO) via the USPTO's electronic filing system on February 12, 2007.

_____   2/12/2007
Attorney for Applicant(s)   Date of Signature

Respectfully submitted,

Edward C. Kwok
Attorney for Applicant(s)
Reg. No. 33,938

Law Offices of
MacPherson Kwok Chen & Heid LLP
2033 Gateway Place, Suite 400
San Jose, CA 95110
Tel: (408) 392-9250
Fax: (408) 392-9262

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<u>(viii) CLAIM APPENDIX</u>

1.   In a data processing system, a method for pricing financial transactions, said method comprising:

creating, in a database system of the data processing system, a plurality of price tables;

creating, in the database system, a plurality of product rules each applicable to one or more of said financial transactions, wherein each of said product rules is linked to one of said price tables; and

for each one of said financial transactions:

identifying an applicable one of said product rules for said transaction; and

pricing said transaction according to the price table linked to said identified applicable product rule.

2.   The method of Claim 1, wherein said price table comprises a billing method.

3.   The method of Claim 1, wherein each of said product rules comprises:

a name of said product rule;

a status of said product rule;

pricing and billing information, including a link to one of said price tables; and

display only information.

4.   The method of Claim 1, wherein each of said product rules is linked to one of said price tables by a price table name.

5.   The method of Claim 1, wherein an entry in each of said price tables comprises a pricing method.

6.   The method of Claim 5, wherein said pricing method is flat fee.

7.   The method of Claim 5, wherein said pricing method is unit price.

8.   The method of Claim 5, wherein said pricing method is unit cost.

9.   The method of Claim 5, wherein said pricing method is volume discount.

10.   The method of Claim 5, wherein said pricing method is tiering.

11.   The method of Claim 5, wherein said pricing method is cost plus.

12.   The method of Claim 5, wherein said pricing method is minimum revenue.

13.   The method of Claim 5, wherein said pricing method is maximum revenue.

14.   The method of Claim 5, wherein said pricing method is markup of total price.

15.   The method of Claim 5, wherein said pricing method is bundled pricing.

16.   The method of Claim 5, wherein said pricing method is bundled pricing across a group of accounts.

17.   The method of Claim 1, wherein said product rule further comprises a plurality of mandatory attributes, said mandatory attributes include an identifier for said product rule.

18.   The method of Claim 1, further comprising, in creating one of said product rules, applying a validating rule to validate said product rules prior to committing said product rules to said database system.

19.   The method of Claim 1, wherein said product rules comprise a default product rule.

20.   The method of Claim 1, wherein said price table contains prices.

21.   The method of Claim 1, wherein said price table contains costs.

22.   The method of Claim 1, wherein said price table contains negative values.

23.   A data processing system for pricing a financial transaction, said data processing system comprising:

    means for creating a product rule in the data processing system applicable to said financial transaction, said product rule comprises a plurality of mandatory attributes and a plurality of optional attributes;

    means for creating a price table in the data processing system;

    means for creating a link between said product rule and said price table; and

means for calculating a price for said financial transaction by identifying said product rule and accessing said price table via said link.

24.   The data processing system of Claim 23, further comprising means for billing.

25.   The data processing system of Claim 23, wherein means for creating a product rule comprises:

means for assigning a name to said product rule;

means for assigning a status to a product rule;

means for associating with said product rule pricing and billing information; and

means for associating said product rule with display only information.

26.   The data processing system of Claim 23, further comprising means for creating an identifier for said product rule using said mandatory attributes.

27.   The data processing system of Claim 26, further comprising means for looking up said optional attributes using said identifier.

28.   The data processing system of Claim 23, further comprising means for applying validation rule to validate said product rules before committing said product rule to a database.

29. The data processing system of Claim 23, further comprising means for creating a default product rule.

(ix) EVIDENCE APPENDIX

None.

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(x) RELATED PROCEEDINGS APPENDIX

None.

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